

Using the NAS Recommended MPT Library

We recommend using HPE's Message Passing Toolkit (MPT) unless there is a strong reason for using another Message Passing Interface (MPI) implementation. HPE MPT is generally more efficient on HPE systems than other MPI libraries.

Benefits of Using HPE MPT

- HPE MPT contains MPI enhancements that are specific to HPE systems. In particular, it offers multiple features for scaling applications to very large process counts.
- The use of MPT on NAS systems is supported by HPE. MPT bugs and issues are tracked closely to provide timely resolution.

Using the Default MPT Version

Typically, there is more than one version of MPT library installed on NAS systems. You can access the currently recommended version by loading **mpi-hpe/mpt**, which points to the recommended version and environmental settings:

```
% module load mpi-hpe/mpt
```

Note: NAS administrators change the MPT version and environmental settings used by **mpi-hpe/mpt** from time to time, as needed, without notification. No recompilation or relinking should be needed for your application.

Loading **mpi-hpe/mpt** instead of a specific MPT module version provides multiple benefits:

- You always get the HPE MPT library with the version and environmental settings recommended by NAS staff.
- You don't have to change your script to load a specific MPT module when a new, improved version becomes available.
- Your script will not fail if an old MPT version is removed from the NAS systems.

If you would like to keep track of which MPT version and settings are being used by your application, you can set the following environmental variables:

```
(for csh, tcsh)
setenv MPI_VERBOSE           (shows MPT version and non-default settings)
setenv MPI_DISPLAY_SETTINGS (shows all MPT settings)

(for sh, bash)
export MPI_VERBOSE=1
export MPI_DISPLAY_SETTINGS=1
```

In addition, we strongly recommend using the **mpiexec** launcher, instead of other launchers (such as **mpirun**) for your MPI application. The **mpiexec** launcher allows logging of the MPI environment used in your PBS job, such as the MPT version and settings, to the NAS system logfiles. If you notice a change in behavior of your jobs as a result of possible changes in **mpi-hpe/mpt**, please provide the PBS job ID when requesting help for investigation.

See [Porting with HPE MPT](#) for more information.

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<https://www.nas.nasa.gov/hecc/support/kb/entry/305/>